

By 2010, the market for Ethernet equipment will be amounted to over \$16 billion per year. Later on Ethernet will replace InfiniBand as the most popular system interconnecting TOP 500 supercomputers.

To sum it up, this network data transfer standard rate of 10 Mbit/s is now the international standard. Also Ethernet technology was the first technology that offered the use of a shared environment for access to the network

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GAME THEORY METHOD IN LOGISTICS

Game theory is a mathematical method of studying the optimal strategies in games. The game is referred to the process, which involves two or more parties competing for the interests. Each party has its own purpose and uses some strategy that can lead to the loss or win (depending on the behavior of other players). Game theory helps to choose the best strategy taking into account the ideas about other participants, their resources and possible actions.

Logisticians opt to use mathematical models and methods for complex problems solving. Mathematical theory of games is a powerful tool for situations analysis on logistics services market with lots of participants.

Supply chains mathematical models has considerably developed over the last decade. Supply chains represent itself a combination of producers, consumers, transport companies and warehouses. Logistics mathematical models describe complex system management, optimize supplies and solve delivery problems. Winning these games lead to the reduction of transport costs, improvement of service quality, price decrease, etc. Most of the existing logistics mathematical models involve unidirectional flow of goods from the manufacturer (seller) to the consumer (buyer).

With the rapid development of e-trading, companies are more often faced with new challenges related to goods delivery organization to the end consumer. For example, many online retailers refund returned goods without commission.

Also, modeling projects the situations when a customer returns product parts or package, e.g., drinking water or carbonated beverages for machines delivery. Providers frequently require returning product packaging. Sometimes, the consumer can choose between the refund on package return or higher price for the non-returnable package.

The purpose of the mathematical model is to offer both sides reasonable and

acceptable tariffs restrictions and determine the optimal packaging lifecycle management strategy for both consumers and producers.

Naturally, the manufacturer tries to minimize product package cost.

A seller imposes pledge on a buyer for a reusable package to secure its return even in case of rejection from further purchase. This deposit depends on consumer's "sensitivity" coefficient, i.e. estimated pledge amount.

The objective of both game players is to minimize reusable package costs and to find an optimal pledge. Depending on cycle number the model may reduce pledge amount in each cycle of the repeated game. The number of game cycles is determined by the projected product package life cycles.

References

1. Simchi-Levi, David; Wu, S. David; Shen, Zuo-Jun (Max). Handbook of Quantitative Supply Chain Analysis: Modeling in the E-Business Era // International Series in Operations Research & Management Science. Vol. 74. – Springer, 2004.

2. P. Borocz, P. Foldesi. The Application of Game Theory onto the Analysis of the Decision Theory of Logistic Packaging. Acta Technica Jaurinensis Series Logistica. Vol 1, № 2, 2008.

3. Petrosyan Zenkevich NA Semina EA Game Theory: A Textbook. allowance for un-ing. – M.: Higher. wk, book house "University", 1998. – pp. 304. – ISBN 5-06-001005-8, 5-8013-0007-4.

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THE EQUITY FIGURE IN ACCOUNTING

Accounting is often said to be the language of business. It is used in the business world to describe the transactions entered into by all kinds of organizations. Transaction are divided into different types, but all of them have the same nature: they affect on company's financial position. At the same time, the financial position of company can be described by the major equation of accounting. This equation is based on three categories:

- assets (resources which are owned by the company);
- liabilities (what the company owes to others);
- equity (founds invested by owners and the retained earnings of accounting period).